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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/821,393	04/09/2004	Anders Landin	5181-99001	1593
35690	7590	07/10/2007		
MEYERTONS, HOOD, KIVLIN, KOWERT & GOETZEL, P.C. P.O. BOX 398 AUSTIN, TX 78767-0398			EXAMINER ELAND, SHAWN	
			ART UNIT 2188	PAPER NUMBER
			MAIL DATE 07/10/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/821,393	LANDIN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Shawn Eland	2188	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 03 May 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Formal Matters***

This Office action is in response to the Applicant's response filed on 05/03/07.

35 U.S.C. 112 2<sup>nd</sup> paragraph rejections for claims 8 – 9, 22, & 29 are withdrawn.

### ***Status of Claims***

Claims 1 – 30 are pending in the Application.

Claims 8 – 9 have been amended.

There are no cancelled or new claims.

Claims 1 – 30 are rejected.

### ***Response to Arguments***

Applicant's arguments filed 05/03/07 have been fully considered but they are not persuasive.

For the argument that both elements 32 and 21 can't be active devices, the Examiner respectfully disagrees. According to the Applicant's specification an active device is configured to perform accesses to memory within the node ([0053]). The processor, element 21, obviously does this, and the Examiner does not believe that the Applicant is disputing this fact. Element 32 accesses said memory in two ways: one through the processor; the other through element 35, the processor cache control (Lienres, col. 6, lines 67 – 68 through col. 7, lines 1 – 2). Element 32 fits this definition of an active device.

For the argument that element 33 cannot be the address network, the Examiner respectfully disagrees. The memory and the processor are part of element 32 in Liencres, which is connected to element 33.

For the argument that Liencres does not teach or disclose in response to the address packet, the interface is configured to send data corresponding to the coherency unit to the active device if no other active device in the node has an ownership responsibility for the coherency unit and the coherency unit is in a modified global access state in the node, the Examiner respectfully disagrees. As shown in figure 3b, and column 6, lines 50 – 60, there can be several bus controllers 31 interfacing with a single processor 21 within each node. If the processor 21 modifies a cache line, then the corresponding bus controller 31 must perform the write (col. 7, lines 46 – 48) and no other bus controller 31 can gain access or ownership responsibility until this data is updated.

Claims 1 – 30 remain rejected under the same grounds as the previous Office action – that is under Liencres (US 5,434,993).

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on

Claims 1 – 30 are rejected under 35 U.S.C. 102(b) as being anticipated by *Liencres* (US 5,434,993).

In regards to claim 1, Liencres teaches a plurality of active devices (*see elements 21, 31 & 32*); an interface to an inter-node network coupling nodes in the multi-node system (*see element 31*); and an address network configured to convey address packets between the interface and the plurality of active devices (*see element 33*); wherein an active device of the plurality of active devices is configured to send an address packet on the address network to initiate a transaction to gain an access right to a coherency unit (*see column 6, lines 38 – 49*); wherein in response to the address packet, the interface is configured to send data corresponding to the coherency unit to the active device if no other active device in the node has an ownership responsibility for the coherency unit and the coherency unit is in a modified global access state in the node (*see column 6, lines 50 – 60*).

In regards to claim 11, Liencres teaches a node comprising a plurality of active devices (*see elements 21, 31, & 32*), an interface to an inter-node network (*see element 31*), and an address network configured to convey address packets between the interface and the plurality of active devices (*see element 33*); an additional node coupled to the node by the inter-node network (*see figure 3a; see column 6, lines 13 – 15*); wherein an active device of the plurality of active devices is configured to send an address packet on the address network to initiate a transaction to gain an access right to a coherency unit (*see column 6, lines 38 – 49*); wherein in response to the address packet, the interface is configured to send data corresponding to the coherency unit to the active device if no other active device in the node has an ownership responsibility for the coherency unit and the coherency unit is in a modified global access state in the node (*see column 6, lines 50 – 60*).

In regards to claim 21, Liencres teaches an active device of a plurality of active devices included in the node sending an address packet on the address network to initiate a transaction to gain an access right to a coherency unit (*see column 6, lines 38 – 49*); in response to the address packet, an interface to the inter-node network included in the node sending data corresponding to the coherency unit to the active device if no other active device in the node has an ownership responsibility for the coherency unit and the coherency unit is in a modified global access state in the node (*see column 6, lines 50 – 60*).

Regarding claims 2 & 12, Liencres teaches wherein the interface includes storage for a plurality of records, wherein each of the plurality of records corresponds to a respective one of a plurality of address packets conveyed on the address network (*see column 9, lines 32 – 47*); wherein the interface is configured to search the storage for records specifying the coherency unit in response to the interface receiving a request for access to the coherency unit from the additional node via the inter-node network (*see column 9, lines 14 – 31*); wherein the interface is configured to send the data corresponding to the coherency unit if one of the records indicates that no active device in the node has the ownership responsibility for the coherency unit and the coherency unit is in the modified global access state in the node (*see column 6, lines 50 – 60*).

Regarding claim 22, Liencres teaches the interface storing a plurality of records, wherein each of the plurality of records corresponds to a respective one of a plurality of address packets conveyed on the address network (*see column 9, lines 32 – 47*); in response to the interface receiving a request for access to the coherency unit from the additional node via the inter-node network, the interface searching the plurality of records for records specifying the coherency unit (*see column 9, lines 14 – 31*); the interface sending the data corresponding to the coherency unit

Art Unit: 2188

if one of the records specifying the coherency unit indicates that no active device in the node has the ownership responsibility for the coherency unit and the coherency unit is in the modified global access state in the node (*see column 6, lines 50 – 60*).

Regarding claims 3, 13, & 23, Liencres teaches wherein the one of the records corresponds to a write back address packet sent to initiate a write back transaction for the coherency unit, wherein the coherency unit does not map to any memory subsystem included in the node (*see column 9, lines 14 – 31*).

Regarding claims 4 & 14, Liencres teaches wherein the address network is configured to convey the write back address packet in broadcast mode, and wherein one of the plurality of active devices that sends the write back address packet is configured to lose the ownership responsibility for the coherency unit in response to receiving the write back address packet (*see column 4, lines 40 – 62*).

Regarding claim 24, Liencres teaches the address network conveying the write back address packet in broadcast mode; and one of the plurality of active devices that sent the write back address packet losing the ownership responsibility for the coherency unit in response to receiving the write back address packet (*see column 4, lines 40 – 62*).

Regarding claims 5 & 15, Liencres teaches wherein in response to the one of the records, the interface is configured to send a pull request to one of the plurality of active devices that initiated the write back transaction; wherein in response to the pull request, the one of the plurality of active devices is configured to send the data corresponding to the coherency unit to the interface (*see column 9, lines 43 – 47; see figure 3b*).

Regarding claim 25, Lientres teaches in response to the one of the records, the interface sending a pull request to one of the plurality of active devices that initiated the write back transaction; in response to the pull request, the one of the plurality of active devices sending the data corresponding to the coherency unit to the interface (*see column 9, lines 43 – 47; see figure 3b*).

Regarding claims 6 & 16, Lientres teaches wherein the one of the plurality of active devices is configured to transition an access right to the coherency unit upon sending the data (*see column 9, lines 32 – 47; the 3 states show what the access right is*).

Regarding claim 26, Lientres teaches further comprising the one of the plurality of active devices transitioning an access right to the coherency unit upon sending the data (*see column 9, lines 32 – 47; the 3 states show what the access right is*).

Regarding claims 7 & 17, Lientres teaches wherein the active device is configured to send the address packet to initiate a read-to-own transaction, and wherein the interface is configured to send the data corresponding to the coherency to the active device in response to accessing one of the plurality of records corresponding to the address packet and in response to receiving the data from the one of the plurality of active devices that initiated the write back transaction (*see column 9, lines 1 – 8*).

Regarding claim 27, Lientres teaches wherein said the active device sending the address packet comprises the active device sending the address packet to initiate a read-to-own transaction (*see column 9, lines 1 - 8*); wherein said the interface sending the data corresponding to the coherency unit to the active device occurs in response to the interface accessing one of the



plurality of records corresponding to the address packet and receiving the data from the one of the plurality of active devices that initiated the write back transaction (*see column 9, lines 1 – 8*).

Regarding claims 8 & 18, Liencres teaches wherein the active device is configured to gain an ownership responsibility for the coherency unit in response to receiving the address packet (*see column 9, lines 1 – 8; see figure 3b*), wherein the interface is configured to send a proxy address packet on the address network in response to receiving the request from the additional node (*see column 6, lines 38 – 52*), wherein the active device is configured to store a promise corresponding to the proxy address packet in a promise array included in the active device in response to receiving the proxy address packet while having the ownership responsibility for the coherency unit (*see element 46*).

Regarding claim 28, Liencres teaches the active device gaining an ownership responsibility for the coherency unit in response to receiving the address packet (*see column 9, lines 1 – 8; see figure 3b*); the interface sending a proxy address packet on the address network in response to receiving the request from the additional node (*see column 6, lines 38 – 52*); and the active device storing a promise corresponding to the proxy address packet in a promise array included in the active device in response to receiving the proxy address packet while having the ownership responsibility for the coherency unit (*see element 46*).

Regarding claims 9 & 19, Liencres teaches wherein in response to the promise, the active device is configured to send data corresponding to the coherency unit to the interface, and wherein the interface is configured to supply the data to the additional node in response to the request upon receiving the data from the active device (*see column 7, “Read Transactions”*).

Regarding claim 29, Liencres teaches in response to the promise, the active device sending data corresponding to the coherency unit to the interface; and the interface supplying the data to the additional node in response to the request upon receiving the data from the active device (*see column 7, "Read Transactions"*).

Regarding claim 10, Liencres teaches wherein the one of the records corresponds to a write stream address packet sent to initiate a write stream transaction for the coherency unit (*see column 9, lines 32 – 47*).

Regarding claims 20 & 30, Liencres teaches wherein the one of the records corresponds to a write back address packet sent to initiate a write stream transaction for the coherency unit (*see column 9, lines 32 – 47*).

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Art Unit: 2188

***Examiner's Information***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shawn Eland whose telephone number is (571) 270-1029. The examiner can normally be reached on MO - TH, & every other FR.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hyung Sough can be reached on (571) 272-4199. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SE

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06/26/2007

  
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